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[Abstract]

[SUBJECT]

Detection and/or the therapy of intestinal tract hemorrhagic *E. coli* bacillus O-157:H7 infection are provided with the nucleic acid which can become useful, amino acid sequences, and these directions for use.

[Means for Solution]

analyzing all the genetic information of O-157 -- O-157 -- genetic information of new polypeptide in which a code is carried out by a new gene included by a specific new nucleic acid molecule and this and said gene is clarified.

[Claim(s)]

[Claim 1]

A nucleic acid molecule specific to intestinal tract hemorrhagic *E. coli* bacillus O-157:H7.

[Claim 2]

It is a nucleic acid molecule specific to intestinal tract hemorrhagic *E. coli* bacillus O-157:H7,

And a nucleotide sequence chosen from a group which consists of SEQ ID NO:1866,

A portion of a nucleotide sequence given in (b) and (a), (c), (a), or a nucleotide sequence given in (b), a complementary nucleotide sequence (d), (a),

(b) Or the nucleic acid molecule according to claim 1 which has in (c) a nucleotide sequence of a description, and a nucleotide sequence hybridized under stringent conditions.

[Claim 3]

It is a nucleic acid molecule which encodes specific polypeptide in intestinal tract hemorrhagic *E. coli* bacillus O-157:H7,

And the nucleic acid molecule according to claim 1 which encodes polypeptide which some amino acids become from deletion and an amino acid sequence substituted or added in an amino acid sequence chosen from a group which consists of SEQ ID NO:1703, its portion, or an amino acid sequence of (b) and (a).

[Claim 4]

Polypeptide specific to intestinal tract hemorrhagic *E. coli* bacillus O-157:H7.

[Claim 5]

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And the polypeptide according to claim 4 which some amino acids become from deletion and the amino acid sequence substituted or added in the amino acid sequence chosen from the group which consists of SEQ ID NO:1703, its portion, or the amino acid sequence of (b) and (a).

[Claim 6]

A vector which contains the nucleic acid molecule according to claim 1 as an insert.

[Claim 7]

The vector according to claim 6 which said insert has connected with a transcriptional control element in operation.

[Claim 8]

A host cell transformed by the vector according to claim 7.

[Claim 9]

A manufacturing method of polypeptide specific to O-157:H7 which consists of culturing the host cell according to claim 8.

[Claim 10]

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And a nucleotide sequence chosen from a group which consists of SEQ ID NO:1866.

And/or, oligo specific to intestinal tract hemorrhagic *E. coli* bacillus O-157:H7 or polynucleotide which consists of a nucleotide sequence constituted from at least 8 nucleotide of a nucleotide sequence of a description, and a complementary nucleotide sequence by (b) and (a).

[Claim 11]

Use of the oligo according to claim 10 or polynucleotide used as a probe for hybridization, or primer for PCR.

[Claim 12]

The oligo according to claim 11 for detection of O-157 infection, or diagnosis, or use of polynucleotide.

[Claim 13]

A vaccine composition which consists of the nucleic acid molecule according to claim 1, its fragment, the oligo according to claim 10 or polynucleotide, and a carrier permitted in medicine.

[Claim 14]

The polypeptide according to claim 4 or its fragment, and a vaccine composition that consists of a carrier permitted in medicine.

[Claim 15]

An antibody molecule which recognizes the polypeptide according to claim 4 specifically.

[Claim 16]

A DNA microarray or a chip containing at least one of the nucleic acid molecule according to claim 1 and/or the oligo according to claim 10, or the polynucleotide.

[Claim 17]

A DNA microarray for detection of O-157 infection, or typing of O-157, or use of a chip.

[Claim 18]

A screening method of a compound useful for prevention and/or a therapy of O-157 infection and symptoms caused by this using the nucleic acid molecule according to claim 1, its fragment, the polypeptide according to claim 4, or its fragment.

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